DOCUMENT RESUME

ED 166 247 TM 008 272

AUTHOR Blackwell, Martha W.
TITLE Attitudinal and Demographic Characteristics of Education Students at Auburn University at Montgomery.
PUB DATE Nov 77
NOTE 81p.; Paper presented at the Annual Meeting of the Mid-South Educational Research Association (Birmingham, Alabama, November, 1977)

EDRS PRICE MF-$0.83 HC-$4.67 Plus Postage.
DESCRIPTORS *Attitude Tests; Differences; *Education Majors; Elementary Secondary Education; Higher Education; *Norms; Sex Differences; *Student Attitudes; Student Characteristics; Student Experience; *Teaching; *Work Attitudes
IDENTIFIERS Auburn University Montgomery AL; Local Norms; Minnesota Teacher Attitude Inventory

ABSTRACT

Norms are presented for various categories of undergraduate and graduate students of education at Auburn University at Montgomery for the total score on the Minnesota Teacher Attitude Inventory. The population was limited to students enrolled in education courses from fall 1973 through 1976, and included 612 volunteers who responded anonymously. Groups found to have significantly more positive attitudes towards children and school work were students in Early Childhood/Reading and in Elementary-Special Education. Those in Secondary-Academic, Counseling-School, and Administration/Supervision had less positive attitudes. Demographic characteristics associated with more positive attitudes include: having at least one offspring, having no work experience prior to teaching, and being female. Characteristics associated with less positive attitudes include: having six or more siblings, being male, having a younger brother, and having had other work experience prior to teaching. (Author/CTM)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED166247

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

Attitudinal and Demographic Characteristics of Education Students at Auburn University at Montgomery

Martha W. Blackwell
School of Education
Auburn University at Montgomery

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Martha Blackwell
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

Supported by a Grant from
Auburn University at Montgomery
Research Grant-in-Aid Program
Montgomery, Alabama 36117

Paper Presentation: Mid-South Educational Research Association
Birmingham, Alabama
November 1977

TM008 272

ABSTRACT

The primary purpose of this study was to investigate attitudes toward children and school work among undergraduate and graduate Education students in a small urban university, Auburn University at Montgomery (AUM). The secondary purpose was to investigate differences in such attitudes among groups differing in selected demographic variables--number of years' teaching experience, work experience, offsrping, siblings, birth order, sex, and age.

Subjects were 612 students enrolled in Education courses at AUM, of whom 593 were in regular Education programs and 19 in other major programs. In regular Education programs, 256 students were undergraduate and 337 graduate. There were 119 males and 493 females. Ages ranged from 18 to 53. Approximately 97% were white and 3% black.

To assess attitudes toward children and school work the Minnesota Teacher Attitude Inventory (MATI) was used. To collect demographic data a Personal Data sheet was used.

Data were collected periodically from Fall 1973 through Summer 1976. Students were asked to participate in a study to establish local normative data on attitudes for AUM Education students, with option to refuse without reprisal. Numerical coding insured anonymity. Sequential procedures for presentation of instruments by cooperating instructors or writer were followed. Data were hand scored and tabulated.

Employed for analyses of data were one-way analysis of variance, F-ratio, F-Test, t-test for independent samples, KR_{21}, and Pearson r. Cochran and Cox's method was used for estimating probability levels for unequal numbers and variances. Acceptable probability level was .05.

Among AUM undergraduate Education students in different concentrations and specializations, comparisons showed no significant differences in attitudes toward children and school work. Results from comparisons between appropriate MTAI norm groups and AUM undergraduates indicated significantly (.001) less positive attitudes for AUM students in General Elementary, Early Childhood/Reading, and Secondary-Academic, but no significant differences for Secondary-Nonacademic majors.

Among AUM graduate Education students in different areas, comparisons revealed significantly (.05 to .001) more positive attitudes for students in Early Childhood/Reading and in Elementary-Special Education than all others and significantly (.05 to .001) less positive attitudes for Secondary-Academic, Counseling-School, and Administration/Supervision majors. Results from comparisons between appropriate MTAI norm groups and AUM graduate Secondary and Elementary majors indicated significantly (.001) less positive attitudes among AUM students except Secondary-Nonacademic majors for whom there was no significant difference.

Demographic characteristics associated with significantly more positive attitudes included having at least one offspring (.01), no work experience prior to teaching (.01), and being female (.01). Demographic characteristics associated with significantly less positive attitudes included having six or more siblings (.05), being male (.01) with a younger brother (.05), and having work experience other than teaching prior to teaching (.01).

TABLE OF CONTENTS

	Page
LIST OF TABLES	iv
INTRODUCTION	1
Purpose of the Study	1
Importance of the Study	1
Basic Assumptions	2
Limitations of the Study	2
Definition of Terms	3
Hypotheses	4
METHODOLOGY AND PROCEDURES	6
Subjects	6
Data Collection	6
Technical Features of the Instrument	6
Statistical Treatment of Data	8
RESULTS AND DISCUSSION	10
Hypothesis I	10
Hypothesis II	29
Hypothesis III	32
Hypothesis IV	41
Hypothesis V	46
Hypothesis VI	48
Hypothesis VII	50
Hypothesis VIII	52

	Page
Hypothesis IX	57
Hypothesis X	58
Hypothesis XI	60
CONCLUSIONS AND RECOMMENDATIONS	61
REFERENCES	64
APPENDIX	66

LIST OF TABLES

Table		Page
1.	Analysis of Variance of MTAI Scores for AUM Education Graduate Students by Concentration and Specialization	11
2.	Comparisons of MTAI Scores between AUM Graduate Students in Elementary-Special Education and Other Education Areas	12
3.	Comparisons of MTAI Scores Between AUM Graduate Students in Early Childhood/Reading and Other Education Areas	13
4.	Comparisons of MTAI Scores Between AUM Graduate Students in General Elementary and Other Education Areas	14
5.	Comparisons of MTAI Scores between AUM Graduate Students in Secondary-Special Education and Other Education Areas	15
6.	Comparisons of MTAI Scores between AUM Graduate Students in Secondary-Academic/Nonacademic and other Education Majors	16
7.	Comparisons of MTAI Scores between AUM Graduate Students in Counseling-School and Other Education Majors	17
8.	Comparisons of MTAI Scores between AUM Graduate Students in Counseling-Nonschool and Education Majors	18
9.	Comparisons of MTAI Scores between AUM Graduate Students in Administration/Supervision and other Education Majors	19
10.	Analysis of Variance of MTAI Scores for AUM Undergraduate and Unclassified Education Students by Concentration and Specialization	29
11.	Summary of MTAI Performances of AUM Education Undergraduate and Unclassified Students by Concentration and Specializations	30
12.	Comparisons of MTAI Scores of AUM Education Graduate Students and Selected MTAI Norm Groups of Experienced Teachers	33
13.	Comparisons of MTAI Scores between AUM Education Undergraduate Students and Comparable MTAI Norm Groups	42
14.	Means, Standard Deviations, and Product-Moment Coefficients of Number of Years' Teaching Experience and MTAI Scores for Regular and Special Education Teachers	47
15.	Comparison of MTAI Scores for Teachers With and Without Work Experience other than Education	48
16.	Comparison of MTAI Scores for AUM Education Students With and Without Offspring	50

Table		Page
17.	Analysis of Variance of MTAI Scores for AUM Education Students with One, Two, Three, and Four or More Offspring. . .	51
18.	Means, Standard Deviations, and Standard Errors of MTAI Scores for AUM Education Students with Offspring	51
19.	Comparison of MTAI Scores for AUM Education Students With and Without Siblings	53
20.	Analysis of Variance of MTAI Scores for AUM Education Students with One, Two, Three, Four, Five, and Six or More Siblings	54
21.	Comparisons of MTAI Scores for AUM Education Students with One, Two, Three, Four, Five, and Six or More Siblings . . .	55
22.	Analysis of Variance of MTAI Scores for AUM Education Students with Same or Opposite Sex Next Younger Sibling	56
23.	Comparisons of MTAI Scores for AUM Education Students with Same and Opposite Sex Next Younger Sibling	57
24.	Analysis of Variance of MTAI Scores for AUM Education Students with Various Birth Orders	57
25.	Means, Standard Deviations, and Standard Errors of MTAI Scores for AUM Education Students with Various Birth Orders	58
26.	Comparison of MTAI Scores for AUM Education Students Between Males and Females	59

Introduction

Increasingly teacher educators are becoming concerned with the facilitation of positive changes in attitudes which will lead to more effective teaching and learning. That teachers' attitudes toward their students significantly affect both teacher and student classroom behaviors and social interactions has been accepted by educators. Research results support the findings of certain affective characteristics associated with teaching (Cantrell, Stenner, and Katzenmeyer, 1976; Flanders, 1965; Yee, 1968). Included among these affective characteristics are generosity in appraisals of the behaviors and motives of others and enjoyment of relationships with students (Ryans, 1960).

The Purpose of the Study

The purposes of this study were two-fold. One purpose was to determine and, if necessary, initiate, appropriate norms on the Minnesota Teacher Attitude Inventory (MTAI) for students enrolled in the School of Education at Auburn University at Montgomery (AUM). There are no norms in the MTAI manual for Special Education teachers, Counselors, Administrators, and Supervisors.

The second purpose was to investigate differences in attitudes toward children and school work as measured by the MTAI among groups differing in selected demographic variables. The selected demographic variables included: number of years of teaching experience, prior work experience, offsrping, birth order, number of siblings, sex, and age.

Importance of the Study

This study was conducted to assess student attitudes toward children and teaching as a profession and to investigate biographical antecedents which were

related to such attitudes. In the teaching profession interpersonal interactions are often crucial in attaining learning outcomes. Because behavior is the result of the confluence of affective, cognitive, and behavioral components, attention to affective development in teacher education programs is essential. While affective development is being dealt with at AUM in individual courses, a more systematic and comprehensive plan for such development could result in producing more effective teachers.

This study was viewed as the initial step toward development of a long-range plan to facilitate holistic student development which would include affective development. The performances of AUM Education students on the MATI could serve as comparison references, or baseline data, for detecting changes in attitudes from entrance into the teacher education program to its completion. Ideally, an affective development plan would include provisions for furthering student self-knowledge through feedback on selected attitudinal and interest inventories and for personal development through voluntary student selection from several options, such as vocational counseling, assertive training, and individual counseling.

Basic Assumptions

1. Students in this study were candid and accurate in responding to the attitude inventory and personal data information sheets.
2. Student responses were not affected by administration variations in time, class, and/or administrator of the instruments.

Limitations of the Study

The population for this study was limited to students enrolled in AUM Education graduate and undergraduate courses, which restricts generalization of the results to other populations. The attitudes measured were those toward

children and school work as a profession as measured by the Minnesota Teacher Attitude Inventory (MTAI). The demographic characteristics investigated were limited to those believed by the writer to affect attitudes under study.

Definition of terms

Attitudes. Attitudes toward children and school work as a profession as measured by the MTAI. Positive attitudes refer to high scores on the MTAI, while negative attitudes refer to low scores on the MTAI.

Beginning Education. Students enrolled in the introductory education course.

Beginning Professional Education. Students enrolled in methods and/or curriculum courses.

Certification. Graduated bachelor's students enrolled in graduate courses for both teacher certification and Master of Education degree.

Classification. Students' level of progression toward an educational goal, such as undergraduate.

Concentration. The major area of study of a student's education plan, such as Secondary Education.

Counseling-Nonschool. Students seeking a Master of Education degree in Counseling who did not plan to work in school settings.

Counseling-School. Students seeking a Master of Education degree in Counseling who did plan to work in school settings.

Graduate. Students seeking a Master of Education degree.

Other (Birth Order). Category for any ordinal birth position which did not fit categories of oldest, next to oldest, middle, next to youngest, and only; for example, subject is third oldest of seven children.

Secondary-Academic. Secondary Education students majoring in the usual subject matter areas, such as English, History, Biology, and others.

Secondary-Nonacademic. Secondary Education students majoring in Art, Music, Physical Education, and Business.

Unclassified. Graduated bachelor's students taking undergraduate education courses for teacher certification.

Without Siblings. Students reporting being only children, having step-siblings, or deceased siblings.

Work Experience. Any job not related to teaching.

Hypotheses

For the following hypotheses the level of probability considered to be statistically significant was .05.

Hypothesis I. There are no statistically significant differences in attitudes toward children and school work among AUM Education graduate students in various concentrations and specializations.

Hypothesis II. There are no statistically significant differences in attitudes toward children and school work among AUM Education undergraduate and unclassified students in various concentrations and specializations.

Hypothesis III. There are no statistically significant differences in attitudes toward children and school work between AUM Education graduate students and comparable MTAI norm groups.

Hypothesis IV. There are no statistically significant differences in attitudes toward children and school work between AUM Education combined undergraduate and unclassified students and comparable MTAI undergraduate norm groups.

Hypothesis V. There are no statistically significant relationships between number of years' teaching experience and attitudes toward children and school work for regular classroom teachers and special education teachers.

Hypothesis VI. There is no significant difference in attitudes toward children and school work between teachers who have had prior work experience other than teaching and those who have not.

Hypothesis VII. There are no significant differences in attitudes toward children and school work among the following comparisons:

1. AUM Education students who have offspring and those who do not have offspring.
2. AUM Education students who have one, two, three, and four or more offspring.

Hypothesis VIII. There are no statistically significant differences in attitudes toward children and school work among AUM Education students in the following comparisons:

1. Students with and students without siblings.
2. Students with various numbers of siblings.
3. Students with same and students with opposite sex next younger sibling.

Hypothesis IX. There are no statistically significant differences in attitudes toward children and school work among AUM Education students of various birth orders.

Hypothesis X. There is no statistically significant difference in attitudes toward children and school work between male and female AUM Education students.

Hypothesis XI. There is no statistically significant relationship between attitudes toward children and school work and ages of AUM Education students.

Methodology and Procedures

Subjects

Subjects were 612 students enrolled in Education courses at AUM, of whom 593 were in regular Education programs and 19 in other major programs. In regular Education programs, 256 were undergraduate and 337 graduate. There were 119 males and 493 females. Ages ranged from 18 to 53. Approximately 97% were white and 3% black. (See Appendix F for a detailed breakdown of subjects by number, classification, and concentration.)

Data Collection

Data were collected periodically from Fall 1973 through Summer 1976. Students were asked to participate in a study to establish local normative data on attitudes for AUM Education students, with option to refuse without reprisal. Students were asked to respond to the Minnesota Teacher Attitude Inventory and a Personal Data sheet designed by the writer. Instruments were administered according to sequential procedures by cooperating instructors or writer. Numerical coding insured anonymity. Data were hand scored and tabulated.

Technical Features of Instrument

The Minnesota Teacher Attitude Inventory was developed in 1951 by Cook, Leeds, and Callis to measure attitudes which predict the effectiveness of interpersonal relationships with students and the satisfaction of teaching as a profession.

Validity (R=.63) was determined originally in 1951 by correlating teachers' scores with three combined outside criteria, which were ratings of teachers by pupils, principals, and specialists in the area of teaching effectiveness.

Subsequent validations with Education students were done by Leeds (1969) and Yee and Fruchter (1971). Resulting validity coefficients ranged from .42 to .55, all high enough to support the validity of the MTAI. Reliability (Split-half, Spearman-Brown) ranges reported for three scoring methods were .88 to .93.

The nine sets of norms published in the MTAI manual were complied from scores from student populations at the University of Missouri, the University of Minnesota, high school students from an unspecified location, and teachers employed in Minnesota during the period 1949-1951. The norms provided include beginning professional, graduating seniors, and graduate Elementary and Secondary Education students with varied levels of training. No norms are provided for Special Education teachers, Counselors, Administrators, and Supervisors.

Five major dimensions tapped by the MTAI have been identified through factor analysis by Horn and Morrison (1965) and Yee and Fruchter (1971). These factors, with the dimensions, are:

Factors I	Children's irresponsible tendencies and lack of self-discipline.
	Understanding, democratic versus aloof, autocratic, harsh.
Factors II	Conflict between teachers' and pupils' interests.
	Favorable opinion about children versus unfavorable.
Factors III	Rigidity and severity in handling pupils.
	Permissive tolerance for misbehavior versus punitive intolerance.
Factors IV	Pupils' independence in learning.
	Pupil self direction versus controlling attitude toward children.
Factors V	Pupils' acquiescence to the teacher.
	Perception of students as cooperative, considerate versus rebellious, disruptive, and disobedient.

Scores on the MTAI range from -150 to +150. High scores on the MTAI indicate positive attitudes on the left side of "versus;" low scores indicate negative attitudes as enumerated after the word "versus."

Statistical Treatment of the Data

Statistical techniques used for analyzing the data were one-way analysis of variance, F-ratio , F-test, t-test for independent samples, Cochran and Cox's method for estimating probability levels for unequal numbers and variances, Kuder-Richardson$_{21}$, and Pearson product-moment correlation. The acceptable probability level was .05 for major between-group comparisons. For combining specialization groups within concentrations, the .10 probability level was used.

For inter-group comparisons of AUM students among various classifications, concentrations, and specializations, one-way analysis of variance and F-ratio were used. Results of analyses with F-ratios significant at the .05 level of probability were submitted to F-tests fo determine homogeneity of variance. For comparing mean-differences between groups homogeneous in variances, the t-test for independent samples, using pooled variance estimates, and tables of critical values for distribution of t probability were used. For comparing mean-differences between groups with significantly (.05) different variances, the t-test, using separate error estimates for uncorrelated data, and Cochran and Cox's method (Boneau, 1960, pp. 49-64; Guilford & Fruchter, 1973, pp. 161-162; Lindquist, 1953, pp. 97-98) for unequal variances and numbers were used.

To provide larger and more equal numbers in groups, some specializations within concentrations were combined into one larger group. Such combinations were performed when both of two conditions were met. These two conditions were homogeneous variances as determined by the F-test and non-significant

mean differences. When differences in means were as great as .10 probability level, separate grouping was maintained. Separate groups were maintained for Counseling-School and Counseling-Nonschool. Within the concentration of Elementary Education, Early Childhood and Reading were combined; within the concentration of Secondary Education, Academic and Nonacademic were combined. The weighting methods for averaging two or more means and standard deviations were used for combining groups. Administration and Supervision were combined because data collected lacked specificity regarding specialization.

For comparisons between AUM groups and MTAI norm groups, the F-Test, t-test for independent samples using either pooled variance or separate error estimates as appropriate, and the Cochran and Cox method were used. Because MTAI normative data for Graduate Education Students and for Elementary Experienced Teachers are not delineated by specializations, the AUM Graduate Elementary specialization groups were combined by the weighting method for averaging two or more means and standard deviations even though the variances were not homogeneous. AUM undergraduate and unclassified groups were combined by the weighting method since the variances were homogeneous and no comparable MTAI norms exist for unclassified groups.

For comparisons among AUM groups differing in selected demographic variables, one-way analysis of variance, F-ratio, F-Test, t-test for independent samples, and Pearson product-moment correlation were used.

Used throughout the study was Kuder-Richardson$_{21}$ to determine reliability for group performances because of the bearing of the internal consistency of a test upon the form of the distribution of total scores on that test. No reliability was less than .96.

Results

Hypothesis I

Hypothesis I stated that there are no statistically significant differences in attitudes toward children and school work among Education graduate students in various areas of concentration and specialization: Elementary-Special Education, General Elementary, Early Childhood/Reading, Secondary-Special Education, Secondary-Academic/Nonacademic, Administration/Supervision, and Counseling-School/Nonschool. Hypothesis I was rejected for three comparisons at the .05 level of statistical significance, four at the .01 level, and three at the .001 level. Hypothesis I was accepted for all other comparisons.

Data from Education Master's level students were analyzed. Significant differences were sought by submitting data to one-way analysis of variance F-test, and t-test techniques. Probability estimates were derived by the Cochran and Cox method for unequal variances and numbers. The results of one-way analysis of variance were statistically significant, $F(6,296) = 5.224$, $p < .001$ level, and are presented in Table 1. Subsequent investigations showed a great enough difference between the mean scores of Counseling-School as compared to Counseling-Nonschool students ($t(56)=1.79$, $p < .10$) to be treated as separate groups. Comparisons of means between Secondary-Academic and Secondary-Nonacademic ($t(56)=.19$, $p > .10$) and between Elementary-Early Childhood and Elementary-Reading ($t(49)=.32$, $p > .10$) showed no significant differences between groups and, consequently, were combined as Secondary-Academic/Nonacademic and Elementary-Early Childhood/Reading. No comparisons between Administration and Supervision specializations were made and they were treated as one group. Combination of groups was accomplished by the weighting methods for averaging means and standard deviations.

Results of comparisons of each group to all other groups are shown in Table 2 through Table 9. Elementary-Special Education comparison results are shown in Table 2, Early Childhood/Reading in Table 3, General Elementary in Table 4, Secondary-Special Education in Table 5, Secondary-Academic/Nonacademic in Table 6, Counseling-School in Table 7, Counseling-Nonschool in Table 8, and Administration/Supervision in Table 9.

Table 1

Analysis of Variance of MTAI Scores for

AUM Education Graduate Students

by Areas of Concentration and Specialization

Source	df	SS	MS	F
Between Groups	6	39765.9375	6627.6562	5.224***
Within Groups	296	375567.0	1268.8074	
Total	302	415332.9375		

***$p < .001$.

Results of F-test analyses of all groups revealed the two groups differing most in variance, although not significantly so, were the Early Childhood/Reading and General Elementary groups. Since no groups were significantly different, the t-test for pooled variance was used for all comparisons.

Broadly viewed, Elementary graduate students are generally more positive in attitudes than all other concentrations. Elementary-Special Education graduate students were more positive in attitudes than General Elementary (.05), Secondary-

Academic/Nonacademic (.001), Counseling-School (.01) and Administration/Supervision (.01). They were not significantly different from Early Childhood/Reading, Secondary-Special Education, and Counseling-Nonschool students. In Table 2 are presented the results of Elementary-Special Education comparisons with other groups, number of subjects, mean, standard deviation, and standard error of means.

Table 2

Comparisons of MTAI Scores Between AUM Graduate Students in Elementary-Special Education and Other Education Areas

Majors	N	df	M	SD	SE	t
Elementary-Special Education	28		53.42	33.56	6.34	
Early Childhood/Reading	51	77	51.64	32.78	4.59	.21
General Elementary	52	78	33.98	41.30	5.76	2.15*
Secondary-Special Education	4	30	61.50	39.78	19.89	.43
Secondary-Academic/Nonacademic	58	84	21.22	33.17	4.35	4.23***
Counseling-School	37	63	28.08	37.48	6.24	2.82**
Counseling-Nonschool	21	47	45.57	32.01	7.15	.81
Administration/Supervision	52	78	28.19	34.79	4.82	3.15**

*$p < .05$.
**$p < .01$.
***$p < .001$.

Early Childhood/Reading graduate students were significantly more positive in attitudes than General Elementary (.05), and Counseling-School (.01), Administration/Supervision, and Secondary-Academic/Nonacademic (both .001). They were not different from Special Education students in either Elementary or Secondary or Counseling-Nonschool students. Table 3 shows the Early Childhood/Reading results of comparisons, number of subjects, means, standard

deviations, and standard errors of means.

Table 3

Comparisons of MTAI Scores Between AUM Graduate Students in Early Childhood/Reading and Other Education Areas

Majors	N	df	M	SD	SE	t
Early Childhood/Reading	51		51.64	32.78	4.59	
Elementary-Special Education	28	77	53.42	33.56	6.34	.21
General Elementary	52	101	33.98	41.30	5.76	2.38*
Secondary-Special Education	4	53	61.50	39.78	19.89	.57
Secondary-Academic/Nonacademic	58	107	21.22	33.17	4.35	4.80***
Counseling-School	37	86	28.08	37.48	6.24	2.87**
Counseling-Nonschool	21	70	45.57	32.01	7.15	.71
Administration/Supervision	52	101	28.19	34.79	4.82	3.52***

*$p < .05$.
**$p < .01$.
***$p < .001$.

General Elementary graduate students were significantly less positive in attitudes than Early Childhood/Reading students and Elementary-Special Education students at the .05 level, but not different in other group comparisons. Their performances on the MTAI were similar to those of Secondary, Counseling-School, and Administration/Supervision students. The General Elementary results of comparisons to all other groups, numbers of subjects, means, standard deviations, and standard error of the means are shown in Table 4.

Table 4

Comparisons of MTAI Scores Between AUM Graduate Students in General Elementary and Other Education Areas

Majors	N	df	M	SD	SE	t
General Elementary	52		33.98	41.30	5.76	
Elementary-Special Education	28	78	53.42	33.56	6.34	2.15*[a]
Early Childhood/Reading	51	101	51.64	32.78	4.59	2.38*[a]
Secondary-Special Education	4	54	61.50	39.78	19.89	1.28
Secondary-Academic/Nonacademic	58	108	21.22	33.17	4.35	1.79
Counseling-School	37	87	28.08	37.48	6.24	.69
Counseling-Nonschool	21	71	45.57	32.01	7.15	1.15
Administration/Supervision	52	102	28.19	34.79	4.82	.77

[a]Cochran and Cox's method embodied.
*$p < .05$.

Secondary-Special Education graduate students were significantly more positive in attitudes than Secondary-Academic, Nonacademic ($p < .05$) but not different in comparisons with all other groups. Although the mean (M=61.50) for this group was the highest of all group means, the variance was also the greatest, which indicates extremity in range of scores. Also, there were only four students in the group. The small sample size and the large variance made the results highly questionable and should be interpreted with caution. To deal with these disproportions in sample size and variance, the F-test and Cochran and Cox method for determining probability for unequal numbers and variances were utilized. Nevertheless, the results should be considered dubious. Table 5 shows the results of comparisons for Secondary-Special Education with all other groups, the number of subjects, means, standard deviations, and standard error of means.

Table 5

Comparisons of MTAI Scores Between AUM Graduate Students in Secondary-Special Education and Other Education Areas

Majors	N	df	M	SD	SE	t
Secondary-Special Education	4		61.50	39.78	19.89	
Secondary-Academic/Nonacademic	58	60	21.22	33.17	4.35	2.32*[a]
Counseling-School	37	39	28.08	37.48	6.24	1.68
Counseling-Nonschool	21	23	45.57	32.01	7.15	.88
Administration/Supervision	52	54	28.19	34.79	4.82	1.83
Elementary-Special Education	28	30	53.42	33.56	6.34	.43
Early Childhood/Reading	51	53	51.64	32.78	4.59	.57
General Elementary	52	54	33.98	41.30	5.76	1.28

[a]Cochran and Cox's method embodied.
*$p < .05$.

Secondary-Academic/Nonacademic graduate students were most negative of all groups in attitudes toward children and school work as measured by the MTAI. They were significantly more negative than Secondary-Special Education (.05) and Counseling-Nonschool students (.01), Early Childhood/Reading, and Elementary-Special Education (both .001). They were not significantly different from Counseling-School and Administration/Supervision graduate students and tended to be more (.10) negative than General Elementary. Table 6 shows results of comparisons of Secondary-Academic/Nonacademic to all other groups as well as number of subjects, means, standard deviations, standard error of the means, and t-values.

Table 6

Comparisons of MTAI Scores Between AUM Graduate Students in Secondary-Academic/Nonacademic and Other Education Majors

Majors	N	df	M	SD	SE	t
Seconcary-Academic/Nonacademic	58		21.22	33.17	4.35	
Secondary-Special Education	4	60	61.50	39.78	19.89	2.32*[a]
Counseling-School	37	93	28.08	37.48	6.24	.93
Counseling-Nonschool	21	77	45.57	32.01	7.15	2.90**[a]
Administration/Supervision	52	108	28.19	34.79	4.82	1.07
Elementary-Special Education	28	84	53.42	33.56	6.34	4.23***[a]
Early Childhood/Reading	51	107	51.64	32.78	4.59	4.80***
General Elementary	52	108	33.98	41.30	5.76	1.79

[a]Cochran and Cox's method embodied.
*$p < .05$.
**$p < .01$.
***$p < .001$.

Counseling-School graduate students were significantly less positive in attitudes than Elementary-Special Education (.01) and Early Childhood/Reading (.01). They were not significantly different from all other groups but they tended to be less positive (.10) than Counseling-Nonschool students. Results of comparisons of Counseling-School to all other groups are presented in Table 7 which also includes numbers, means, standard deviations, and standard error of means.

Table 7

Comparisons of MTAI Scores Between AUM Graduate Students in Counseling-School and Other Education Majors

Majors	N	df	M	SD	SE	t
Counseling-School	37		28.08	37.48	6.24	
Counseling-Nonschool	21	56	45.57	32.01	7.15	1.79
Secondary-Special Education	4	39	61.50	39.78	19.89	1.68
Secondary-Academic/Nonacademic	58	93	21.22	33.17	4.35	.93
Administration/Supervision	52	87	28.19	34.79	4.82	.01
Elementary-Special Education	28	63	53.42	33.56	6.34	2.82**
Early Childhood/Reading	51	86	51.64	32.78	4.59	2.87**
General Elementary	52	87	33.98	41.30	5.76	.69

**$p < .01$.

Counseling-Nonschool graduate students were significantly more positive in attitudes than Secondary-Academic/Nonacademic students (.01), and tended to be more positive (.10) than Counseling-School and Administration/Supervision graduate students They were not different from Elementary-Special Education, Early Childhood/Reading, General Elementary, and Secondary-Special Education. Table 8 presents the results of comparisons of Counseling-Nonschool students to all other groups and also shows numbers of subjects, means, standard deviations, and standard errors of means.

Table 8

Comparisons of MTAI Scores Between AUM Graduate Students in Counseling-Nonschool and Education Majors

Majors	N	df	M	SD	SE	t
Counseling-Nonschool	21		45.57	32.01	7.15	
Counseling-School	37	56	28.08	37.48	6.24	1.79
Secondary-Special Education	4	23	61.50	39.78	19.89	.88
Secondary-Academic/Nonacademic	58	77	21.22	33.17	4.35	2.90**[a]
Administration/Supervision	52	71	28.19	34.79	4.82	1.97
Elementary-Special Education	28	47	53.42	33.56	6.34	.81
Early Childhood/Reading	51	70	51.64	32.78	4.59	.71
General Elementary	52	71	33.98	41.30	5.76	1.15

[a]Cochran and Cox's method embodied.
**$p < .01$.

Administration/Supervision students were significantly less positive in attitudes than Elementary-Special Education students ($p < .01$) and Early Childhood and Reading students ($p < .001$). They were not significantly different in all other comparisons but tended to be less positive (.10) than Counseling-Nonschool students. They had practically equal means with Counseling-School students. Results of comparisons for Administration/Supervision with all other groups are presented in Table 9 as well as numbers of subjects, standard deviations, and standard error of means.

Table 9

Comparisons of MTAI Scores Between AUM Graduate Students in Administration/Supervision and Other Education Majors

Majors	N	df	M	SD	SE	t
Administration/Supervision	52		28.19	34.79	4.82	
Counseling-School	37	87	28.08	37.48	6.24	.01
Counseling-Nonschool	21	71	45.57	32.01	7.15	1.97
Secondary-Special Education	4	54	61.50	39.78	19.89	1.83
Secondary-Academic/Nonacademic	58	108	21.22	33.17	4.35	1.07
Elementary-Special Education	28	78	53.42	33.56	6.34	3.15**
Early Childhood/Reading	51	101	51.64	32.78	4.59	3.52***
General Elementary	52	102	33.98	41.30	5.76	.77

**$p < .01$.
***$p < .001$.

Discussion

Comparisons Among AUM Graduate Education Students

In Hypothesis I , Elementary graduate Education students overall were more positive in attitudes toward children and school work as a profession than those in other major concentrations. Among inter-specialization comparisons in Elementary, Special Education and Early Childhood/Reading majors were significantly more positive in attitudes than General Elementary (.05), Secondary-Academic/Nonacademic (.001), Counseling-School (.01), and Administration/Supervision (.01 and .001, respectively), but not significantly different from Secondary-Special Education or Counseling-Nonschool.

Possible contributing factors for these results include the teaching situation, instructional methods and materials, parental support, student developmental characteristics, and assessment practices. More than in other classes, the physical aspects of teaching for Special Education and Early Childhood/Reading usually include more support personnel, varied and grade-leveled teaching materials, and small enrollments. Having small numbers of students in a class permits greater opportunities for more small group and individualized instructional planning and teaching, especially when coupled with support personnel and appropriate materials. One of the benefits of more individualized instruction, on a one-to-one or small group basis, is that failure frustration can be reduced. Since the student's progress frequently is evaluated in terms of improvement over entry-level performance, the development of a positive self-concept based on achievement is facilitated, which, in turn, can result in positive behavior and attitudes. Additionally, small numbers

permit more freedom of movement and expression as well as opportunities for interpersonal interaction, thereby reducing the necessity for imposing restrictions to prevent interference with other students' learning.

Parents of young children and exceptional children frequently have actively sought educational training befitting the special needs of their children. Since parental consent is necessary for enrollment in such programs, it seems reasonable to assume that they are generally favorably inclined toward the efforts for educating their offspring. Through the identification process, favorable parental attitudes toward the teaching learning situation would tend to be emulated by offspring and to foster positive behavior of the children, which, in turn, could lead to positive teacher attitudes toward children.

Another factor believed by the writer to contribute to teacher attitudes is assessment. Receipt of Federal funding, which presently helps finance existing public compensatory Early Childhood/Reading and Special Education programs, incurs assessment. Although required by law to administer norm-referenced tests in these programs, each school system is free to select any one or more from several tests. The lack of uniformity in test instrument usage has prevented comparisons between and within school systems on a regular state-wide basis. While teachers in special programs have "grown-up" with assessment, they have not yet experienced the threat implicit in comparisons of students' achievement on the scale that many regular classroom teachers have. Up to this year throughout Alabama, the California Achievement Test has been administered in the spring to the fourth, sixth, and eighth grades. Beginning in the spring of 1978, the second grade will be included in the state-wide testing program. In the Montgomery system the California Achievement Test has been administered in the fall to the fourth, seventh, and tenth grades and a practice reading test and Comprehensive Test of Basic Skills to the second grade. In short, for a long time regular classroom teachers from

grade four up have been more easily and readily accessible for comparisons on student achievement to teachers throughout the state in specific grades and academic areas while special program teachers have not. Teachers' perceptions of threat could result in teacher behaviors directed toward a more structured classroom to assure learning. In striving for structure and order, conflicts between the goals of students' freedom and teachers' educational objectives could arise, which produce negative attitudes toward children by teachers. Teachers who believe a classroom should be highly structured tend to score low on the MTAI, thereby resulting in a negative attitude interpretation.

In summary, the differences in attitudes in inter-specialization comparisons of Elementary graduate Education students are likely related to the varying conditions of teaching as described herein. The teaching environments of Special Education, Early Childhood/Reading, and General Elementary are actually very different. General Elementary graduate Education students were not different in attitudes from all other groups. It could well be that the teaching environment of General Elementary is more similar to that of Secondary-Academic/Nonacademic than to other Elementary specializations.

In regard to the Secondary-Special Education graduate students, it is important to note that there were only four students, a very small number for comparisons with other groups at least five times larger, and that the variance within the group was very large. Although precautions in statistical analyses were taken, the great discrepancy in numbers and variance renders any interpretation extremely questionable. The following statements should be examined with caution and considered highly tentative. The Secondary-Special Education graduate Education students are significantly (.05) more positive in attitudes than Secondary-Academic/Nonacademic but not different from all other groups. The

factors believed to account for their obtaining the highest mean performances of all are the same as those recounted for Elementary-Special Education and Early Childhood/Reading. Those factors were smaller classes, more support personnel and materials, more opportunity for small group and individualized instruction, and, generally, more supportive parents.

Of all groups, Secondary-Academic/Nonacademic graduate Education students reported the most negative attitudes toward children and school work as a profession. They were significantly less positive than Elementary-Special Education (.001), Early Childhood/Reading (.001), Secondary-Special Education (.05), and Counseling-Nonschool (.01). They were not significantly different from General Elementary, Counseling-School, and Administration/Supervision students. Secondary-Academic/Nonacademic are generally acknowledged to be subject- rather than student-oriented and, often, are attracted to teaching initially as the most available avenue to satisfying two goals--earning a livelihood and pursuing a favorite subject. They are different from other Education majors from the beginning. Decidedly different is their teaching environment which could accentuate and accelerate negative attitudes. Factors in their teaching environment include generally large classes, little or no support personnel and varied and leveled materials, about six different classes with a total of 125 or more students daily, and parental support dimmed by time and loss of enthusiasm. Additional factors are compulsory attendance and developmental stage of students. The combination of accumulated failure frustration for many students and of vacillating dependent-independent urges at times culminates in a classroom learning environment conducive to abrasive interpersonal relations. The final possible factor is the greater number of male students in Secondary than in Elementary Education. As revealed in one investigation in this study, male students are significantly (.01) less positive in attitudes than female students. In essence, Secondary-Academic/Nonacademic

students are different from Elementary groups in sex representation, initial motivation, and teaching environment.

Counseling-School graduate Education students are significantly (.01) less positive in attitudes than Elementary Special Education and Early Childhood/Reading and tend to be less positive (.10) than Nonschool Counseling students, but are not significantly different from all other groups. Of all groups, their attitudes resemble most those of Administration/Supervision and Secondary-Academic/Nonacademic graduate Education students. On the surface this outcome is rather startling and certainly unexpected, considering the traits generally associated with counselors, especially empathy and unconditional positive regard. Further analysis suggests certain realities and factors which help clarify the close resemblance in attitudes. One reality is that, within the state of Alabama, only secondary schools have school counselors. Since secondary schools utilize counselors it appears quite natural that some secondary teachers would seek training in counseling, entering with, and perhaps retaining, their orientation toward subject-matter rather than students. The data were not analyzed to determine the effects of cumulative progression through the Counseling program on attitudes since this area was not the purpose of the study. However, investigation of the relationship between attitudes and various levels of advancement through the Counseling program is recommended. Another major factor is that, until quite recently, salary increments for higher level degrees could be obtained regardless of the major of that degree. Since a choice of Master's major existed, it well could be that Counseling was perceived as being either more useful and interesting than higher-level, in-depth courses in the Secondary teaching major or less threatening, particularly to those who had not been students for several years. Finally, the major of Counseling could have been selected by those who sought an escape from the classroom due to pervasive general dissatisfaction with classroom teaching,

which would be reflected in low MTAI performance.

Counseling-Nonschool graduate Education students are significantly (.01) more positive in attitudes than Secondary-Academic/Nonacademic students and tend to be more positive (.10) than Counseling-School and Administration/Supervision students. They are not significantly different from the three Elementary groups and Secondary-Special Education group. Generally, these students have not received teacher training or taught in a classroom setting but have had experiences requiring interpersonal relation skills, frequently on a one-to-one basis. The differences of the Nonschool group in training and work orientation render comparisons to those decidedly in Education inappropriate, although it is interesting to note that they fall at the median and resemble more the groups which are positive in attitudes than those which are not.

Administration/Supervision graduate Education students are significantly less positive in attitudes toward children and school work as a profession than Elementary-Special Education (.01) and Early Childhood/Reading (.001), but not significantly different from all other groups. They tend to be less positive (.10) than Counseling-Nonschool graduate Education students. Of all groups, Administration/Supervision and Counseling-School graduate Education students are most similar (M=28.19 and M=28.08, respectively). Two factors previously mentioned for seeking training in areas other than the students' existing majors could account, in part, for attitudes different from other majors. These factors are the lures of escape from the classroom and salary increments. General dissatisfaction with classroom teaching would be reflected in low MTAI performance interpretable as negative attitudes. Generally, salary increases commensurate with added responsibility associated with changing to Administrative/Supervisory positions are larger than salary increases for teachers with the same level of training who remain in the classroom. Another possible factor influencing attitudes is sex. As compared to

other major areas in Education, graduate Education male students more often seek Administrative concentration than any other area. One of the investigations of this study revealed male Education students to be significantly (.01) more negative in attitudes toward children and school work as a profession than females. The approximate ratios of male and female graduate Education students at AUM are 50:50 in Administration and 20:80 in Supervision. Administration and Supervision were treated as one group in this investigation. It is possible that significant differences by sex and specialization were masked by such grouping. One recommendation of this study is the examination of the effects of sex and specialization for these two groups upon attitudes. The final factor believed to affect attitudes is the nature of the goals and content of Administration/Supervision courses, assuming instruction does produce behavioral and attitudinal changes. It would seem logical that studying how to lead and manage people and/or a school system when granted the responsibility and legal authority to do so would influence students. The direction of this influence would be toward valuing the control imposed by the structure of the chain of command and toward viewing possible sources of disruption with disfavor. Should this be the case, generalization of such attitudes to the classroom situation could be reflected in low performance on the MTAI. In summary regarding Administrative/Supervisory results, the factors believed to influence attitudes for these graduate Education students were motivation, impact of courses, and, perhaps, sex.

In summary, the investigative results were mostly in the expected directions. Elementary majors once again demonstrated being more positive in attitudes toward children and school work than Secondary. Overall, Elementary-Special Education and Early Childhood/Reading were more positive in attitudes than all other groups. Rather startling was the indication that General Elementary graduate Education

students' attitudes are more like those of majors in other areas than those specializing within the Elementary major. Special Education students had the highest means of all specializations. Another unexpected result was the attitudes of Counselor majors. Counseling-Nonschool graduate Education students' attitudes tended to be more positive than Counseling-School and resembled those more positive in attitudes, the Elementary and Special Education majors. Counseling-School graduate Education students' attitudes were similar to those less positive in attitudes, Administration/Supervision and Secondary-Academic/Nonacademic majors. Of all groups, the most negative in attitudes were Secondary majors.

Recommendations for further research based on the results of this study include investigations of the relationships between attitudes and various levels and kinds of Educational training, assessment, and sex. The study of attitudinal changes at various stages of progression through an Educational program could provide information to make sound decisions in instructional and programmatic planning for affective development. While negative attitudes of Secondary majors could be reflection of true conditions in the real world, the potential impact of accrued negative teacher attitudes upon junior and senior high school students facing the drop-out decision merits further investigation of the affective influence of teacher education programs, particularly Secondary programs. The investigation of the relationship between attitudes and wide-scale comparability of results of student achievement assessments in specialized programs, heretofore not subject to comparison, is strongly recommended. Such investigations are especially pertinent for Early Childhood, Reading, and Special Education because recently state-adopted use of equivalent normal curve units permits achievement comparisons within and between school systems. The investigation of the relationship of attitudes and sex is recommended for all concentrations to help determine the

existence of a need for program differentiation and individualized instruction. The fourth, and final, recommendation concerns collection of normative data for concentrations and specializations related to Education. At present there are no compiled normative data on MTAI performance for Education-related areas, although research literature is replete with references to MTAI usage with specialized groups. Among concentrations and specialization for which normative data are desirable are Counseling, Special Education, Reading, and Administration/ Supervision. It is highly likely that enough data currently exist which, if collected and compiled, would remedy this lack. While local normative data remain most relevant and appropriate, the existence of some such reference of performances could be helpful in examining and determining degrees of facilitative attitudes for Educators. The addition of supplemental normative data of Education-related areas to the MTAI Manual is strongly recommended.

Results and Discussion

Comparisons Among AUM Undergraduate and Unclassified Education Students

Hypothesis II stated that there are no significant differences in attitudes toward children and school work among AUM Education undergraduate and unclassified students in various concentrations and specializations. Undergraduate students were those seeking a bachelor's degree and enrolled in the regular teacher training program; unclassified students were those with bachelor's degrees taking undergraduate Education courses for teacher certification. Comparisons were made of MTAI performances of these students by specialization areas which were Elementary-Special Education, Early Childhood/Reading, General Elementary, Secondary-Special Education, Secondary-Academic, and Secondary-Nonacademic.

All MTAI data collected from Fall 1973 through Summer 1976 quarters were used. Data for the twelve groups were submitted to one-way analysis of variance. Results of analysis were not significant, $F(11, 244) = .792$, $p < .05$. Hypothesis II was accepted and no further analyses were made. Table 10 presents the results of one-way analysis of variance. In Table 11 are presented the means, standard deviations, and standard errors of the means for undergraduate and unclassified Education students by concentration and specialization.

Table 10

Analysis of Variance of MTAI Scores for
AUM Undergraduate and Unclassified Education Students
by Areas of Concentration and Specialization

Source	df	SS	MS	F
Between Groups	11	9597.5	872.50	.792
Within Groups	244	268966.25	1102.32	
Total	255	278563.75		

Table 11

Summary of MTAI Performances of

AUM Education Undergraduate and Unclassified Students

by Areas of Concentration and Specialization

Areas	N	M	SD	SE
Elementary				
Undergraduate-Special Education	14	29.57	35.65	9.53
Unclassified-Special Education	11	39.63	31.17	9.40
Undergraduate-General	42	28.16	38.37	5.92
Unclassified-General	22	23.62	39.51	8.42
Undergraduate-Early Childhood/Reading	37	35.54	26.12	4.29
Unclassified-Early Childhood/Reading	7	37.57	26.20	9.90
Secondary				
Undergraduate-Special Education	1	65		
Unclassified-Special Education	7	13.85	47.23	17.85
Undergraduate-Academic	45	29.31	23.32	3.47
Unclassified-Academic	41	25.29	33.53	5.23
Undergraduate-Nonacademic	22	19.72	38.48	8.20
Unclassified-Nonacademic	7	35.14	35.19	13.30

Note. Unclassified designates graduated bachelor's students taking undergraduate Education courses for teacher certification.

There are no data on MTAI performances for AUM Education students prior to this investigation, consequently, no comparisons to past performances can be made. However, two research findings suggest areas for further research. Cantrell, Stenner, and Katzenmeyer (1977) found that teachers who were highly knowledgeable in behavior management techniques were characterized in attitudes by high positive acceptance of children, high belief in the responsibility of children, low belief that children should submit completely to authority, low dissatisfaction with children and teaching, low belief in teacher-pupil distance, and high belief in student freedom. The research recommendation based on these results is to investigate the relationship between changes in attitudes and cumulative knowledge at various levels of progression through the undergraduate Education program.

The other finding which resulted from the present investigation showed that students with one and more children were significantly more positive (.01) in attitudes than students with no offspring. The second research recommendation based on these results is to investigate the validity of the existence of such a relationship between attitudes and parenthood with undergraduate and unclassified Education students and students at other teacher Education institutions.

Results

Hypothesis III

Hypothesis III stated that there are no statistically significant differences in attitudes toward children and school work between AUM Education Master's students and MTAI norm groups of experiences teachers with various levels of academic training. Comparisons were made between AUM graduate Elementary and Secondary majors, of whom approximately 96% are experienced teachers, and comparable MTAI norm groups. Not included in these comparisons are Administration/Supervision, Counseling, and Special Education. The specializations of Counseling and Special Education are relative newcomers to the field of Education, having evolved since the MTAI norms were established, and, consequently, there are no published norms for these two specializations in the MTAI manual. Additionally, in regard to Special Education, previous investigation by this writer had already indicated decidedly more positive attitudes by Special Education specialists than other specialists, a finding which could render specious and biased results in comparisons to non-Special Education areas. Of the nine comparisons made, three were significant at the .01 level and two at the .001 level. Hypothesis III was rejected for five comparisons and accepted for four. The results of all comparisons are presented in Table 12.

AUM Elementary graduate students in Early Childhood/Reading and General Education were combined for comparisons because the MTAI Elementary Teacher norms are not categorized by specializations, but are presented simply as Elementary Teachers. The MTAI Elementary Teacher norms are classified according to teachers in school systems with fewer than 21 teachers and systems with 21 or more teachers with both two- and four-years' training. Comparisons of AUM Elementary were made to the MTAI Elementary teachers with four-years' training in both the fewer than

Table 12

Comparisons of MTAI Scores of AUM Education Graduate Students and Selected MTAI Norm Groups of Experienced Teachers

Groups	n	df	M	SD	SE	t
AUM Elementary[a]	103		42.72	38.19	3.76	
MTAI Graduate Education	200	301	64.0	33.3	2.36	4.79***
MTAI Elementary Teacher, four-years' training, 21+[b]	247	348	55.1	36.7	2.34	2.92**
MTAI Elementary Teacher, four-years' training -21[b]	102	203	37.0	39.4	3.92	1.06
AUM Secondary-Academic	48		21.6	33.96	4.95	
MTAI Graduate Education	200	246	64.0	33.30	2.36	8.03***
MTAI Secondary Academic Teacher, five-years' training	218	264	40.8	39.50	2.68	3.21**
MTAI Secondary Academic Teacher, four-years' training	264	310	24.7	40.6	2.50	.52
AUM Secondary-Nonacademic	10		19.4	30.65	10.21	
MTAI Graduate Education	200	209	64.0	33.3	2.36	4.15**
MTAI Secondary Nonacademic Teacher, five-years' training	70	79	28.9	36.5	4.40	.78
MTAI Secondary Nonacademic Teacher, four-years' training	98	106	9.7	42.7	4.33	.87

Note. Cochran and Cox's method for estimating probability embodied.

[a]AUM Elementary consists of Early Childhood, Reading, and General Elementary specializations.

[b]School systems with more than 21 teachers in the system=21+; school systems with fewer than 21 teachers in the system=-21.

**$p \leq .01$.

***$p \leq .001$.

21 and the more than 21 school faculty sizes and MTAI Graduate Education Students taking introductory graduate courses who were experienced teachers.

Data were analyzed by the F-Test, t-test for independent samples, and probability estimates by the Cochran and Cox method for unequal numbers and variances. Results of F-Test analyses revealed significantly greater variance (.05) in only one comparison, that of AUM Elementary graduate students and MTAI Graduate Education Students ($F=1.32$, $df=102, 199$). Consequently, the t-test using separate error estimates was used for these two groups only and pooled variance was used in all other comparisons.

Results of analyses showed AUM Elementary graduate students to be significantly less positive in attitudes than MTAI Graduate Education students who were experienced teachers taking introductory graduate courses (.001) and Elementary teachers with four-years' training in systems with 21 or more teachers (.01), but not significantly different from Elementary teachers with four-years' training in systems with fewer than 21 teachers.

AUM Secondary-Academic graduate students were compared to three MTAI norm groups. These were MTAI Graduate Education students who were experienced teachers taking introductory graduate courses, Secondary Academic teachers with five-years' training, and Secondary Academic teachers with four-years' training. AUM-Secondary Academic graduate students were significantly less positive than MTAI Graduate Education students (.001) and Secondary Academic teachers with five years' training (.01), but were not significantly different from MTAI Secondary Academic teachers with four-years' training.

AUM Secondary-Nonacademic graduate students were compared to MTAI Graduate Education students, Secondary Nonacademic teachers with five-years' training and with four-years' training. AUM Nonacademic students were significantly different only from the MTAI Graduate Education students (.01) in the direction of being less positive in attitudes than the norm group. They were not significantly

different from MTAI Secondary Nonacademic teachers with four- and five-years' training.

In summary, AUM Elementary and Secondary graduate students overall were less positive in attitudes toward children and school work as a profession than the MTAI norm groups. They differed most from MTAI Graduate Education students who were experienced teachers taking introductory graduate courses. AUM Elementary graduate students resembled most the MTAI Elementary teachers with four-years' training in systems with fewer than 21 teachers and AUM Secondary-Academic resembled most the MTAI Secondary Academic teachers with four-years' training. AUM Secondary-Nonacademic were similar to the MTAI Secondary Nonacademic norm groups with both four- and five-years' training but were significantly different from MTAI Graduate Education students.

Discussion

Comparisons between AUM Education Graduate Students and Selected MTAI Norm Groups

The major findings for Hypothesis III of differences in attitudes between AUM Education Graduate Students and comparable MTAI norm groups of experienced teachers were that AUM students are significantly less positive in attitudes than MTAI Graduate Education students who were taking introductory graduate courses and that AUM students resemble most the MTAI norm groups with four-years' training.

AUM Elementary students, composed of students specializing in Early Childhood, Reading, and General Elementary, were significantly less positive in attitudes than MTAI Graduate Education students (.001), MTAI Elementary teachers with four-years' training in school systems with more than 21 teachers (.01), but not significantly different from MTAI Elementary teachers with four-years' training in school systems with fewer than 21 teachers.

AUM Secondary-Academic students were significantly less positive in attitudes than MTAI Graduate Education students (.001), MTAI Secondary Academic teachers with five-years' training (.01), but not significantly different from MTAI Secondary Academic teachers with four-years' training.

AUM Secondary-Nonacademic students were significantly less positive in attitudes than MTAI Graduate Education students (.01), but not significantly different from MTAI Secondary Nonacademic teachers with four- or five-years' training.

Since factors believed to affect attitudes toward children and school work as a profession are pervasive and relevant for all AUM Graduate Education students, regardless of major concentration and specialization, the following remarks are intended to represent all AUM Education graduate groups.

Since the establishment of the MTAI normative data during the period of 1949 to 1951, myriad historical and social events have occurred which have created an entirely different school milieu. The three most salient events, presented according to increasing impact upon the schools, are the launching of Sputnik in 1957, Watergate in 1972, and Civil Rights legislation in 1964.

Since Sputnik, emphases in schools have been to teach more complex subject-matter at ever lower grades to increasingly younger students as a result of being attacked by the public at large. Spin-off resulting from public scrutiny has included accountability in Education, as demonstrated by the National Assessment of Educational Progress on the national level and competency-based testing of high school seniors as prerequisite to graduation on the state level.

The national populace has suffered disillusionment and loss of trust in governmental leadership as one result of Watergate. The influence of Watergate upon the classroom ambience, admittedly elusive and intangible, is believed by this writer to have affected students' attitudes toward authority in the direction of disrespect, if not outright contempt. The teacher, representing authority and leadership in the classroom, has been the recipient of generalized negative attitudes.

The third salient event, of the greatest impact of all upon school systems, is the Civil Rights legislation of 1964 resulting from the Supreme Court decision on segregation in 1954. The region first affected by the judicial decision is common knowledge. What is not so commonly known outside the region are the profundity and reverberation of effects upon the public school system. Cultural shock, turmoil of reorganizing, diversity in achievement and mores within individual classrooms, fear of the unknown, threat of federal punitiveness, and uncertainty of the outcome left the public schools reeling under the impact of federal intervention to promote integration. School environments were dominated

and permeated by nuances of emotions difficult, if not impossible, to portray with mere words. The turbulence has subsided and adjustment is mostly completed. The public schools survived, but not without cost. One of the costs in the aftermath is the necessity to maintain order. Highly structured and tightly organized school systems and classrooms have been necessary, and in many cases still are, to maintain the ongoing of the business of education.

The results of the influences of three events of national scope - Sputnik, Watergate, and Desegregation - upon the public school systems and classrooms are believed to be reflected in the study by low MTAI scores (or performances). Sputnik spin-off increased pressure upon teachers to produce student achievement. Translated into teacher behavior, achievement emphasis led to task- rather than student-oriented thrusts, entailing curtailment of student freedom and highly structured learning plans. Ripples from Watergate eroded respect for people in leadership and authority roles. Translated into teacher behavior, being the recipients of negative attitudes of students toward teachers evoked reciprocal negative attitudes of teachers toward students. Desegregation resulted in highly structured and tightly organized school systems and classrooms. In conclusion, national events have had a tremendous impact upon Education, which could be reflected by low scores on the MTAI.

Regional differences, perhaps, could account, in part, for MTAI performance variance between MTAI norm groups and AUM graduate Education students. The nature of regional differences can be inferred from the following geographical and historical facts. This study was conducted in the Heart of Dixie in the city of the State Capitol located in an area commonly referred to as the "Bible Belt." The city is unique in its being the original capital of the Confederacy, the site of a church once pastored by Martin Luther King, Jr., and the destination of the Selma march in 1965. These facts suffice to demonstrate regional differences.

Yet another possible contributing factor to MTAI performance variance could be the composition of subjects in this study. Approximately 96% of the students were experienced teachers, most of whom taught in public rather than private schools, and the others were freshly graduated bachelor degree Elementary and Secondary graduate students. While the MTAI investigation of effects of years of teaching experience upon MTAI performance showed no significant relationship between the two, later research by others was contradictory. After two years teaching, attitudes become stabilized at about the level found prior to teacher preparation (Beamer & Ledbetter, 1957), and such lowered attitudes seem to result from interaction with pupils, not mere passage of time (Day, 1959). Heil and Washburne (1962) found that teacher warmth and permissiveness vary with years of teaching experience. Yee (1968) found influence upon pupils in lower-class neighborhoods increases with increased number of years teaching experience, and that lower-class pupils are more susceptible to teacher attitudes than middle-class pupils, tending to reflect those of the teacher.

Differential effects of teacher attitudes upon various kinds of students are important for educators to know. Cantrell, Stenner, and Katzenmeyer (1977) reported that first-grade teachers knowledgeable about positive contingency management and highly positive in attitudes toward children produced greater achievement gains for low- and middle-IQ pupils than did either traditional-authoritarian or traditional non-authoritarian. Traditional-authoritarian teachers produced greater achievement gains than did traditional-nonauthoritarian. With the implementation of mainstreaming, further investigations of the effects of teacher attitudes upon student achievement are highly pertinent.

Questions raised by this study are numerous. Are the results of this comparison study reflecting the effects of national events upon the school milieu nationally? Have attitudes of teachers changed nationally? Are regional differences the reason for the results? Is there a relationship between gradients of integration

and attitudes? Would curriculum changes affect attitudes? What effects do teacher attitudes have upon academic achievement and self-concept of students differing in socio-economic, age, intellectual, and personality variables?

Recommendations for further research have evolved from these questions. Further research recommendations include investigation of differences in MTAI performances of comparable groups in other parts of the region and nation, comparing performances to the MTAI norm groups and to each other, investigation of differences in attitudes of teachers in schools with various degrees of integration and mainstreaming, investigation of the effects of a Behavior Modification course or others upon attitudes, and investigation of relationships with and effects of teacher attitudes and achievement and self-concept of students differing in socio-economic status, age, grade, intelligence, and personality variables in various school settings.

Results

Hypothesis IV

Hypothesis IV stated that there are no statistically significant differences in attitudes toward children and school work as a profession between AUM Education undergraduates and comparable MTAI norm groups. Results of analyses showed three of the five comparisons to be significantly different at the .001 level. Hypothesis IV was rejected for three comparisons and accepted for two. AUM Education undergraduate students in General Elementary, Early Childhood/Reading, and Secondary-Academic were significantly less positive in attitudes than the MTAI norm groups. AUM Education undergraduate students taking the introductory Education course and AUM Secondary-Nonacademic undergraduate students taking methods and/or curriculum courses were not significantly different from the MTAI norm groups. In Table 13 the results of comparisons between AUM and MTAI undergraduate students are presented.

Data analyzed were those collected during the Summer 1976 quarter because no previously collected data had specific course-enrollment information. These data were necessary to permit comparability to the MTAI undergraduate norm groups which were organized according to Education Freshmen, Beginning Education Juniors, and Graduating Education Seniors. Education Freshmen is interpreted as students taking the introductory courses in Education. Beginning Education Juniors is interpreted as students taking methods and/or curriculum courses. No comparisons to Graduating Education Seniors, MTAI norm groups, were made because no regular student teaching internships are conducted during summers at AUM. The student teaching internship is generally last in the Education program and immediately precedes graduation.

Since results of analysis of variance showed no significant difference between unclassified and undergraduate AUM Education students in Hypothesis II, both

Table 13

Comparisons of MTAI Scores Between AUM Education Undergraduate Students and Comparable MTAI Norm Groups

Groups	N	df	M	SD	SE	t
AUM First Education Course	14		16.42	26.54	7.09	
MTAI Education Freshmen	43	55	14.67	34.94	5.38	.17
Beginning Professional Education[a]						
AUM General Elementary	22		23.63	39.51	8.62	
MTAI General Elementary	228	248	59.50	26.30	1.74	4.17**[b]
AUM Early Childhood and Reading	15		30.46	30.37	8.12	
MTAI Early Childhood	134	147	65.90	29.80	2.58	4.478***
AUM Secondary Academic	46		24.32	34.25	5.11	
MTAI Secondary Academic	136	180	48.30	29.20	2.51	4.611***
AUM Secondary Nonacademic	15		25.39	45.07	12.05	
MTAI Secondary Nonacademic	238	251	44.10	27.10	1.76	1.536

Note. AUM data collected during Summer 1976 quarter, unclassified and undergraduate were combined.

[a]Beginning Professional Education designates students were taking undergraduate methods and/or curriculum courses.

[b]Cochran and Cox's method embodied for all probability estimates.

***$p < .001$.

classifications were combined to form the undergraduate group. Unclassified refers to bachelor-degree graduates enrolled in undergraduate Education courses for teacher certification. Undergraduate, of course, refers to students enrolled in the regular undergraduate Education program seeking a bachelor's degree and teacher certification.

The results of F-tests revealed two significant (.01) differences in variance between AUM and MTAI groups. AUM General Elementary undergraduate and MTAI General Elementary were different from each other (F=2.76, df=21, 227) as were AUM and MTAI Secondary-Nonacademic (F=2.76, df=14, 237). To deal with these disparities in variances, the t for independent groups using separate variance estimates was used.

Pooled variance was used in *t*-tests for the other three comparisons. One other statistical precaution against unequal numbers and unequal variances was used for all groups. This was the Cochran and Cox method for estimating probability levels. Caution in interpretation of results is urged. It is suggested that the .01 level be interpreted as .05 and the .001 level as .01. It is possible that larger group sizes of AUM students would have yielded different outcomes.

Discussion

Undergraduate AUM and MTAI Comparisons

Results of investigating Hypothesis IV showed AUM students to be significantly less positive in attitudes for three groups and not significantly different in two. This finding is congruent with the results from Hypothesis III which revealed AUM graduate students in Elementary and Secondary to be less positive than MTAI norm groups, also. Among the implications derived from dual outcomes of AUM and MTAI comparisons of graduate and undergraduate groups is support for the recommendations for further investigations of attitudes on both national and regional scope to determine the effects of time, changes in schools wrought be events, and regional differences. Many of the factors believed to have affected attitudes of the AUM graduate students are the same which would affect AUM undergraduate students. Since these were discussed in detail in relation to Hypothesis III, the reader is referred to that section; no repetition will be made here.

The fact that AUM and MTAI introductory-course level students are not significantly different suggests that some differences in the curriculum may contribute to the greater positive attitudes of MTAI students. One integral part of the AUM Teacher Education Program is planned laboratory experiences in which the students are in actual classrooms at varied school systems as part of course requirements in three-fourths of all Education courses. While an aside investigation during this study suggested that teachers with experience in more than one school setting tended toward more positive attitudes (.10) than those with experience in only one, the effects upon students in the undergraduate program are unknown. Another facet to be considered relates to the drop in attitudes to the level prior to teacher preparation after about two-years' teaching experience (Beamer & Ledbetter, 1957) which could have resulted from interaction with pupils rather than mere passage of time (Day, 1959). Assuming these findings to be true currently, it could well be that

the attitudes of AUM undergraduate students are based on perceptions of conditions as they truly are today in the real world of daily education. If so, it could be speculated that these students, after teaching for a couple of years, will not demonstrate the drop in attitudes as found by Beamer & Ledbetter (1957), since their interaction with bona fide public school students accrues to a considerable amount by the end of the AUM Teacher Education Program. Thus, it could be predicted that while AUM attitudes are less positive during the program they are more realistic and more stable. It is possible that greater exposure to the actual conditions of teaching could result in better prepared teachers.

Recommendations for further research based on this part of the study are the investigation of the effects on attitudes of laboratory experiences in varied school settings as compared to laboratory experiences in only one school setting and the investigation of changes in attitudes of AUM graduates after two years' teaching experience.

The third major part of this study concerned demographic characteristics in relation to attitudes toward children and school work among AUM Education students. Among demographic variables investigated were number of years' teaching experience, prior work experience, offspring, siblings, birth order, sex, and age. Of nine comparisons made, five were accepted, two were rejected at the .05 level of significance, and three were rejected at the .01 level. Hypothesis V, number of years' teaching experience, was accepted and results are shown in Table 14. Hypothesis VI, prior work experience, was rejected (.01); results are presented in Table 15. Hypothesis VII, offspring, involved two investigations, having offspring and number of offspring. Hypothesis VII was rejected at the .01 level for having offspring and accepted for number of offspring; results are presented in Tables 16, 17, and 18. Hypothesis VIII dealt with siblings in three facets--having siblings, number of siblings, and sex of next younger sibling. Hypothesis VIII was accepted for having siblings, rejected for number of siblings at the .05 level and for sex of next younger sibling at the .02 level. Results of comparisons for Hypothesis VIII are presented in Tables 19, 20, 21, 22, and 23. Hypothesis IX, birth order, was accepted and results are presented in Tables 24 and 25. Hypothesis X, sex of student, was rejected at the .01 level of significance; results are presented in Table 26. Hypothesis XI, age of student, was accepted.

All data collected from Fall 1973 through Summer 1976 were included in these analyses, regardless of classification, concentration, specialization, or ommission of responses.

The following format includes sequential presentation of results and discussion combined for Hypothesis V through Hypothesis XI.

Results and Discussions for Hypotheses V through XI

Hypothesis V

Hypothesis V stated that there are no statistically significant relationships between number of years' teaching experience and attitudes toward children and school work for regular classroom teachers and special education teachers. Hypothesis V was accepted for all comparisons. Data from all subjects who reported current and/or past teaching experience, regardless of classification, were included for analysis. The results of Pearson product-moment correlation showed coefficients of .003 (df=353) for regular classroom teachers and -.042 (df=22) for special education teachers. Table 14 presents the means, standard deviations, and correlation coefficients for both groups.

Table 14

Means, Standard Deviations, and Product-Moment Coefficients of Number of Years' Teaching Experience and MTAI Scores for Regular and Special Education Teachers

Groups	N	df	M	SD	r
Regular Classroom Teachers	355	353			
Years' Teaching Experience			5.18	4.76	
MTAI			33.72	37.05	.003
Special Education Teachers	24	22			
Years' Teaching Experience			4.25	4.68	
MTAI			49.04	36.38	-.042

The MTAI Manual states that items which discriminated according to number of years' teaching experience were eliminated from the final form. The results of this particular investigation seem to support this contention. Results from other research showed increased number of years' teaching experience were related to reduced warmth and permissiveness (Heil & Washburne , 1962), with attitudes becoming stabilized after two-years' teaching experience at about the level found prior to teacher preparation (Beamer & Ledbetter, 1957), which appeared to result from interaction with pupils rather than mere passage of time (Day, 1959). Further research is recommended to determine the effects of increased years of teaching upon teacher attitudes.

Hypothesis VI

Hypothesis VI stated that there was no significant difference in attitudes toward children and school work between teachers who have had prior work experience in fields other than teaching and those who have not. Hypothesis VI was rejected at the .01 level of statistical significance. Teachers who reported prior work experience other than teaching were significantly less positive in attitudes than those teachers who had no prior work experience in other fields. In Table 8 are shown the means, standard deviations, standard errors of the mean, and critical t-values.

Table 15

Comparison of MTAI Scores for Teachers

With and Without Work Experience Other Than Education

Groups	N	df	M	SD	SE	t
With Work Experience	85		31.57	33.82	4.66	
Without Work Experience	98	181	46.29	40.22	4.06	2.66**

**$p < .01$.

Prior work experience of teachers other than teaching was found to be a factor between more and less positive attitudes toward children and school work. Many subjects failed to respond to this item, which could mean that a greater number of responses might have resulted in a different outcome. Teachers reporting no work experience were significantly more positive (.01). Other research results have indicated that kind and number of work experiences are related to attitudes. Veldman (1964) found direct relationships among teacher education undergraduates between number of positions previously held and scores on inventories of rational autonomy, mental health, supervisor evaluation, pupil-rated strict control general performance, and attitudes toward parents. Among college men, prior clerical or sales employment experience rather than other kinds of work was associated with satisfactory college adjustment (Anastasi et al., 1960). Among female Secondary Education undergraduates, students judged to be in need of counseling, according to performance on a battery of inventories on attitudes toward self and others, significantly more often (.001) reported two or more work experiences than those judged not to need counseling who reported none or one work experience (Blackwell, 1972). Since it is possible that curriculum change could affect attitudes it is important to verify the finding of negative attitudes and prior work experience other than teaching. Further research is recommended to investigate the validity of prior work experience effects on attitudes toward children for Education students in teacher training programs at other institutions. Further research at AUM is recommended for curriculum changes designed to meet the need of attitudinal changes.

Hypothesis VII

Hypothesis VII had two parts. The first part stated that there was no significant difference in attitudes toward children and school work between all AUM education students who have offspring and those who do not. Part one was rejected at the .01 level of statistical significance. Education students who have one or more offspring are significantly more positive in attitudes. Table 16 presents the means, standard deviations, standard errors of the mean, and critical t-value for students with and without offspring.

Table 16

Comparison of MTAI Scores for AUM Education Students With and Without Offspring

Groups	N	df	M	SD	SE	t
With Offspring	251		37.46	32.67	2.06	2.98**
Without Offspring	361	610	28.89	36.47	1.92	

**$p < .01$.

The second part of Hypothesis VII stated that there were no significantly statistical differences among students with one and more offspring. This second part of Hypothesis VII was accepted; there were no differences in attitudes among students who had one, two, three, or four and more offspring. Table 17 presents the results of one-way analysis of variance; Table 18 presents the means, standard deviations, and standard errors of the mean for students having one, two, three, and four or more offspring.

Table 17

Analysis of Variance of MTAI Scores for

AUM Education Students with One, Two, Three, and Four or More Offspring

Source	df	SS	MS	F
Between Groups	3	1206.37	402.12	.374
Within Groups	247	265770.18	1075.99	
Total	250	266976.56		

Table 18

Means, Standard Deviations, and Standard Errors of MTAI Scores for

AUM Education Students with Offspring

Groups	N	M	SD	SE
One Offspring	96	35.50	34.65	3.53
Two Offspring	96	39.52	31.02	3.16
Three Offspring	37	35.24	33.98	5.58
Four or More Offspring	22	40.81	29.81	6.35

Students having one or more offspring were significantly more positive (.01) in attitudes toward children and school work as a profession than those who had no offspring. It could be surmised that close, intimate contact with one's own child or children through developmental stages provides greater insight, knowledge, and understanding of the complexities of becoming a fully functioning human being. Increased understanding generally results in greater empathy, acceptance, and tolerance of less-than-perfect behavior. Based on these results it appears that increased understanding of developmental stages and first-hand acquaintance with reasonable expectations of behavior do generalize from the immedate family circle to other developing beings.

While being a parent seems to produce more positive attitudes toward children, the number of offspring appears to make no difference in attitudes. The greatest gain in understanding of children apparently occurs with the first encounter with parenthood, with subsequent births making smaller differences in attitudes, if any. In educational situations, where supportive, non-directive, and accepting teachers are extremely important for facilitating learning in affective as well as cognitive areas, serious consideration should be given in the choice of teachers, with being or not being a parent one of the considerations. Further research is recommended to determine the relationship of being a prent as well as teacher with school achievement and affective development among students varying in age, grade, intellectual, and personality variables.

Hypothesis VIII

Hypothesis VIII, in three parts, stated that there were no significant differences in attitudes between students with and without siblings, between students with various numbers of siblings, and between students with same or

opposite sex next younger sibling. Hypothesis VIII was accepted for the comparison of students with siblings to those without siblings, but rejected for the comparisons among students with various numbers of siblings (.05) and sex of next younger sibling (.02). The comparison of students with and without siblings is shown in Table 19. Without siblings includes those with no siblings, those with deceased siblings, those with step-siblings, and, unfortunately, some who failed to respond to the item.

Table 19

Comparison of MTAI Scores for AUM Education Students With and Without Siblings

Groups	N	df	M	SD	SE	t
With Siblings	503	610	32.57	35.90	1.60	.24
Without Siblings	109		31.66	31.86	3.05	

The first part of Hypothesis VIII investigated attitudes and siblings. Having or not having siblings was not associated with attitudinal differences. The without classification included only children, those with step-siblings, those with deceased siblings, and those who failed to respond to the item. It was assumed that failure to respond was interpretable as having no siblings, an assumption which admittedly could be false. It could be that had these responses been recorded the outcome of this analysis would have been different. It is also possible that a curvilinear relationship between number of siblings and attitudes cancelled out any existing differences. This possibility is

supported by the finding that students having six and more siblings were significantly (.05) less positive in attitudes than all other designations.

In the second part of Hypothesis VIII, number of siblings and attitudes were investigated. The results of analysis of variance are shown in Table 20 and a breakdown of performances by number of siblings is presented in Table 21. Number of siblings was found to reflect differences in attitudes. Students with six and more siblings were significantly less (.05) positive in attitudes than all other comparisons. A possible contributing factor could be the competition for attention within the family milieu, with greater numbers of siblings inciting more negative attitudes. Other research findings indicate the influence of number of siblings. Having "four or more siblings" was related to successful college adjustment (Anastasi et al., 1960). The more siblings of female student teachers, the better the interpersonal attitudes (Veldman, 1964). Subjects from a large family were likely to score high on the need for abasement (Hearn, Charles, & Wolins, 1965).

Table 20

Analysis of Variance of MTAI Scores for AUM Education students with One, Two, Three, Four, Five, and Six or More Siblings

Source	df	SS	MS	F
Between Groups	5	14641.81	2928.36	2.301*
Within Groups	497	632507.62	1272.65	
Total	502	647149.37		

*$p < .05$.

In comparisons among students with one, two, three, four, five, and six or more siblings, significantly (.05) more negative attitudes toward children were found for students with six or more siblings in four of the five comparisons. This group was not significantly different in attitudes from students with five siblings. Subjects with two siblings were more positive in attitudes than all other groups, although not significantly so. In descending order of means, the three-siblings group was second high, then four-siblings, one-sibling, five-siblings, with the six-siblings group lowest.

Table 21

Comparisons of MTAI Scores for AUM Education Students with One, Two, Three, Four, Five, and Six or More Siblings

Groups	N	df	M	SD	SE	t
One Sibling	154		31.85	37.23	3.00	
Two Siblings	140	292	38.16	34.76	2.93	1.50
Three Siblings	93	245	33.27	34.69	3.59	.30
Four Siblings	54	206	32.01	33.85	4.60	.16
Five Siblings	30	182	27.00	37.27	6.80	.62
Six Siblings	32	184	15.62	36.14	6.38	2.30*
Two Siblings	140		38.16	34.76	2.93	
Three Siblings	93	231	33.27	34.69	3.59	.81
Four Siblings	54	192	32.01	33.85	4.60	1.12
Five Siblings	30	168	27.00	37.27	6.80	1.50
Six Siblings	32	170	15.62	36.14	6.38	2.49*
Three Siblings	93		33.27	34.69	3.59	
Four Siblings	54	145	32.01	33.85	4.60	.21
Five Siblings	30	121	27.00	37.27	6.80	.82
Six Siblings	32	123	15.62	36.14	6.38	2.41*
Four Siblings	54		32.01	33.85	4.60	
Five Siblings	30	82	27.00	37.27	6.80	.63
Six Siblings	32	84	15.62	36.14	6.38	2.10*
Five Siblings	30		27.00	37.27	6.80	
Six Siblings	32	60	15.62	36.14	6.38	1.22

*$p < .05$

The third part of Hypothesis VIII concerned the sex of the next younger sibling of male and female Education students. Because there were numerous omitted responses for this item, the results should be interpreted with caution. Male students with a younger brother were significantly less positive in attitudes than female students with a younger brother (.05) or with a younger sister (.01), but not significantly different from male students with a younger sister. Table 22 presents the results of one-way analysis of variance; Table 23 shows the comparisons of groups with each other including the means, standard deviations, standard errors of the means, and t-ratios.

Table 22

Analysis of Variance of MTAI Scores for AUM Education Students with Same or Opposite Sex Next Younger Sibling

Source	df	SS	MS	F
Between Groups	3	12535.50	4178.50	3.427**
Within Groups	247	301159.12	1219.26	
Total	250	313694.62		

**$p < .02$.

Males in general have more negative attitudes toward children than do females. Since competitiveness is usually considered to be a male trait, it could be that negative feelings toward males by other males are generated more often from competing with same sex rather than opposite sex siblings. The reason for more negative attitudes toward children expressed by males with next younger sibling a brother needs to be explored. Further research is recommended with other Education student populations to substantiate or not the finding in this part of the study.

Table 23

Comparisons of MTAI Scores for AUM Education Students with Same and Opposite Sex Next Younger Sibling

Groups	N	df	M	SD	SE	t
Male with younger brother	26		8.38	39.47	7.74	
Male with younger sister	17	42	20.23	32.80	7.95	1.029
Female with younger brother	96	120	28.58	34.36	3.50	2.598*
Female with younger sister	112	136	31.75	34.58	3.26	3.079**
Male with younger sister	17		20.23	32.80	7.95	
Female with younger brother	96	111	28.58	34.36	3.50	.932
Female with younger sister	112	127	31.75	34.58	3.26	1.298
Female with younger brother	96		28.58	34.36	3.50	
Female with younger sister	112	206	31.75	34.58	3.26	.668

*$p \leq .05$.
**$p \leq .01$.

Hypothesis IX

Hypothesis IX stated that there were no significant differences in attitudes toward children among subjects of various birth orders--oldest, next to oldest, middle, next to younger, youngest, only, and other ordinal position. Hypothesis IX was accepted. The results of one-way analysis of variance are shown in Table 24. Table 25 presents performances by birth orders showing means, standard deviations, and standard errors of the means.

Table 24

Analysis of Variance of MTAI Scores for AUM Education Students with Various Birth Orders

Source	df	SS	MS	F
Between Groups	6	6347.25	1057.87	.831
Within Groups	552	702491.18	1272.62	
Total	558	708838.43		

The finding of no differences in attitudes among students with various birth orders is contradictory to the finding by Veldman (1964) that third or later born subjects were highest of all ordinal births on interpersonal attitudes. While there were no statistically significant differences in birth orders and attitudes, the highest mean was made by the middle birth order group. Research related to the middle or older child in the family position was done by Chambers (1964), in relation to creativity among chemists. Greater creativity was found among chemists who were middle or older child in the family ordinal births.

Table 25

Means, Standard Deviations, and Standard Errors of MTAI Scores for AUM Education Students with Various Birth Orders

Groups	N	M	SD	SE
Oldest	192	32.80	40.47	2.92
Next to Oldest	42	33.88	32.54	5.02
Middle	58	37.39	32.00	4.20
Next to Youngest	42	32.71	29.66	4.57
Youngest	150	31.80	34.35	2.80
Only	57	30.22	33.18	4.39
Other	18	16.66	28.94	6.82

Further research is recommended for investigating the effects of birth order and attitudes, with the eventual goal of curriculum designed to attenuate attitudes potentially deleterious to teaching and learning.

Hypothesis X

Hypothesis X stated that there was no significant difference in attitudes toward children and school work between male and female education students.

Hypothesis X was rejected at the .01 level of statistical significance. As expected, female education students were significantly more positive in attitudes toward children and school work. Table 26 presents the means, standard deviations, standard errors of the mean, and the t-ratio comparison for male and female education students. Not included in this analysis were data with omitted responses.

Table 26

Comparison of MTAI Scores for AUM Education Students Between Males and Females

Groups	N	df	M	SD	SE	t
Males	119		20.39	36.43	3.34	2.81**
Females	322	439	30.56	32.68	1.82	

**$p < .01$.

The MTAI Manual has no separate norms for males and females. Two references to male and female performances are made. In the Graduate Education norm group of two hundred experienced teachers taking introductory graduate Education courses, half the sample is male and the other half female. Difference in mean performances is 7.31 points, inferred to be an insignificant difference. A footnote states that in general men and women graduate students have MTAI scores which are not significantly different; however, no mention is made to other groups. The second reference to sex of subjects is in regard to returns from males teaching in the elementary schools to determine which factors related to teacher attitudes. The male returns were referred to as unusuable for analysis, but no reason was given for their being unusable. Confusion exists as to male-female ratios within the norm groups. The result of this investigation

is the basis for recommending further research to explore the differences in attitudes of male and female Education students.

Hypothesis XI

Hypothesis XI stated that there was no statistically significant relationship between attitudes toward children and school work and age of subject. Hypothesis XI was accepted. Statistical analysis yielded a Pearson product-moment correlation coefficient of .09, df=84. Since there were numerous omissions in response to the age item, it is likely that the result of these data is inconclusive. Because it is possible that some relation exists between age of subjects and number of years of teaching experience with attitudes toward children and school work, further research is recommended. Should there be a relationship, curvilinear or otherwise, it might well be that teacher rotation within a range of grades would produce better teaching and learning.

Conclusions

In this study attitudes and demographic characteristics of AUM Education students were investigated. Caution should be exercised in generalizing the findings to other populations because the results represent data obtained from a limited area. Although statistical methods for dealing with unequal numbers were applied, interpretation should be considered tentative since the exploratory nature of the investigation in some instances resulted in comparisons between large and small group sizes. Additionally, response omissions, particularly for age, might have resulted in non-representative findings.

Fulsome and detailed findings, discussions, and recommendations immediately follow the Results section for each hypothesis. The Appendix section contains tables combining and summarizing research results. An extremely brief summary of the major findings is presented below.

Major findings were:

1. There were significant differences in attitudes among AUM Education graduate students in various concentrations and specializations. Among those different in attitudes, the group most positive in attitudes was Elementary-Special Education, while the group most negative in attitudes was Secondary-Academic.

2. There were no significant differences in attitudes in comparisons of AUM Education undergraduate and unclassified students in various concentrations and specializations.

3. AUM Education graduate and undergraduate students overall were significantly less positive in attitudes than comparable MTAI norm groups.

4. Among comparisons of AUM Education students differing in demographic characteristics, the groups which were significantly more positive in attitudes were those who had no work experience other than teaching, who had offspring,

and who were female. Those significantly less positive in attitudes were those who had six and more siblings, were male, and were males whose next younger sibling was a brother.

Recommendations

Recommendations for further research are in four broad areas, which include current attitudes, curriculum effects, school environment effects, and demographic characteristics.

For investigation of current attitudes, comparable student populations at other teacher-training institutions, particularly in Alabama and the South East, could be used to determine the generalizability of results from this study to the state and region. The attitudes of specialized education students in Special Education, Counseling, Administration, and Supervision need to be compiled into normative groups, for the purpose of comparisons in evaluating affective development. At present no normative data are accessible for these groups.

The effects of curriculum on attitudes should be researched. For AUM this research effort is especially pertinent, particularly during progression through the teacher training program so that curriculum changes could be made relevant to student needs. Also recommended is follow-up research on graduates after a period of teaching experience to determine the long-term effects on attitudes of differing amounts and kinds of curriculum experiences for the purpose of examining curriculum revision needs.

In addition to examining possible long-term effects of curriculum on teachers, the impact of school environment upon teachers' attitudes should be researched because it is possible that school environment produces greater attitudinal changes than curriculum.

Finally, differences in attitudes according to varying demographic characteristics of students should be investigated for the purpose of curriculum planning for affective development.

REFERENCES

REFERENCES

Anastasi, A., Meade, M. J., & Schneiders, A. A. The validation of a biographical inventory as a predictor of college success. College Entrance Examination Board, New York, 1960.

Beamer, G. C., & Ledbetter, F. W. The relation between teacher attitudes and the social service interest. Journal of Educational Research, 1957, 50, 655-666.

Blackwell, M. W. Beasley. Autobiographical and attitudinal relationships among female secondary education students (Doctoral dissertation, University of Alabama, 1972). Dissertation Abstracts International, 1973, 33, 6721A. (University Microfilms No. 73-8021, 176)

Boneau, C. A. The effects of violations of assumptions underlying the t test. Psychological Bulletin, 1960, 57, 49-64.

Cantrell, R. P., Stenner, A. J., & Katzenmeyer, W. G. Teacher knowledge, attitudes, and classroom teaching correlates of student achievement. Journal of Educational Psychology, 1977, 69, 172-179.

Day, H. P. Attitude changes of beginning teachers after initial teaching experience. Journal of Teacher Education, 1959, 10, 326-328.

Flanders, N. A. Teacher influence, pupil attitudes, and achievement (Document No. OE-25040). Washington, D.C.: U. S. Government Printing Office, 1965.

Guilford, J. P., & Fruchter, B. Fundamental statistics in psychology and education(5th ed.). New York: McGraw-Hill, 1973.

Hearn, J. L., Charles, D. C., & Wolins, L. Life history antecedents of measured personality variables. Journal of Genetic Psychology, 1965, 107, 99-110.

Heil, L. M., & Washburne, C. Brooklyn College research in teacher effectiveness. Journal of Teacher Education, 1962, 55, 347-351.

Leeds, C. H. Predictive validity of the Minnesota Teacher Attitude Inventory. Journal of Teacher Education, 1969, 20, 51-56.

Lindquist, E. F. Design and analysis of experiments in psychology and education. Boston: Houghton, Mifflin Company, 1953.

Ryans, D. G. Characteristics of teachers: their description, comparison and appraisal. Washington, D.C.: American Council on Education, 1960.

Veldman, D. J. Personality correlates of selected biographical items. The University of Texas, College of Education, Mental Health in Teacher Education, Research Memorandum 31, 1964.

Yee, A. H. Source and direction of causal influence in teacher-pupil relationships. Journal of Educational Psychology, 1968, 59, 275-282.

Yee, A. H., & Fruchter, B. Factor content of the Minnesota Teacher Attitude Inventory. American Educational Research Journal, 1971, 8, 119-133.

LIST OF APPENDICES

Appendix A 68

Summary of Direction and Significance of MTAI Performances from Comparisons among AUM Education Graduate Students

Appendix B 69

Composite of MTAI Performances for AUM Education Students by Concentration, Specialization, and Level

Appendix C 70

Composite of Comparisons between AUM Education Students and Comparable MTAI Norm Groups

Appendix D 71

Summary of Demographic Characteristics of AUM Education Students Associated with MTAI Scores

Appendix E 72

Summary of MTAI Performances for Summer 1976 AUM Education Students by Education Undergraduate Course Sequence

Appendix F 73

Classification and Concentration of AUM Education Students in MTAI Study

Appendix A

Summary of Direction and Significance of MTAI Performance from Comparisons among AUM Education Graduate Students

Areas	More Positive		Less Positive		No Difference
Elementary					
Special Education			Gen Elem	.05	ECE/R
			Sec-A/Na	.001	Sec-Sp Ed
			Cnslg-Sch	.01	Cnslg-Nonsch
			Adm/Sup	.01	
Early Childhood/ Reading			Gen Elem	.05	Elem-Sp Ed
			Sec-A/Na	.001	Sec-Sp Ed
			Cnslg-Sch	.01	Cnslg-Nonsch
			Adm/Sup	.001	
General Elementary	ECE/R	.05			Sec-Sp Ed
	Elem-Sp Ed	.05			Sec-A/Na
					Cnslg-Sch
					Cnslg-Nonsch
					Adm/Sup
Secondary					
Special Education			Sec-A/Na	.05	Elem-Sp Ed
					ECE/R
					Gen Elem
					Cnslg-Sch
					Cnslg-Nonsch
					Adm/Sup
Academic and Nonacademic	Elem-Sp Ed	.001			Gen Elem
	ECE/R	.001			Cnslg-Sch
	Sec-Sp Ed	.05			Adm/Sup
	Cnslg-Nons	.01			
Counseling					
Counseling-School	Elem-Sp Ed	.01			Gen Elem
	ECE/R	.01			Sec-Sp Ed
					Sec-A/Na
					Cnslg-Nonsch (.10)
					Adm/Sup
Counseling-Non-school			Sec-A/Na	.05	Elem-Sp Ed
					ECE/R
					Gen Elem
					Sec-Sp Ed
					Cnslg-Sch (.10)
					Adm/Sup (.10)
Administration and Supervision	Elem-Sp Ed	.01			Gen Elem
	ECE/R	.001			Sec-Sp Ed
					Sec-A/Na
					Cnslg-Sch
					Cnslg-Nonsch (.10)

Appendix B

Composite of MTAI Performance for AUM Education Students by Concentration, Specialization, and Level

Groups	N	M	SD	SE
Administration/Supervision				
Master's	52	28.19	34.79	4.82
Counselor Education				
School				
Master's	37	28.08	37.48	6.16
Nonschool				
Master's	21	45.57	32.01	6.98
Elementary Education				
General Elementary				
Master's	52	33.98	41.30	5.76
Unclassified	22	23.62	39.51	8.42
Undergraduate	42	28.16	38.37	5.92
Early Childhood/Reading				
Master's	51	51.64	32.78	4.59
Unclassified	7	37.57	26.20	9.90
Undergraduate	37	35.54	26.12	4.29
Special Education				
Master's	28	53.42	33.56	6.34
Unclassified	11	39.63	31.17	9.40
Undergraduate	14	29.57	35.65	9.53
Secondary Education				
Academic				
Master's	48	21.60	33.96	4.90
Unclassified	41	25.29	33.53	5.23
Undergraduate	45	29.31	23.32	3.47
Nonacademic				
Master's	10	19.40	30.65	9.69
Unclassified	7	35.14	35.19	13.30
Undergraduate	22	19.72	38.48	8.20
Special Education				
Master's	4	61.50	39.78	19.89
Unclassified	7	13.85	47.23	17.85
Undergraduate	1	65.0		

Composite of Comparisons between AUM Education Students

and Comparable MTAI Norm Groups

Groups	N	df	M	SD	SE	t
Summer 1976						
Education Freshmen						
AUM First Education Course	14		16.42	26.54	7.09	
MTAI Education Freshmen	43	55	14.67	34.94	5.38	.17
Beginning Professional Education[a]						
AUM General Elementary	22		23.63	39.51	8.62	
MTAI General Elementary	228	248	59.50	26.30	1.74	4.175***
AUM Early Childhood and Reading	15		30.46	30.37	8.12	
MTAI Early Childhood	134	147	65.90	29.8	2.58	4.478***
AUM Secondary Academic	46		24.32	34.25	5.11	
MTAI Secondary Academic	136	180	48.30	29.20	2.51	4.611***
AUM Secondary Nonacademic	15		25.39	45.07	12.05	
MTAI Secondary Nonacademic	238	251	44.10	27.10	1.76	1.588
Fall 1973-Summer 1976						
Master's Level-Experienced Teachers						
AUM Elementary-General, Early Childhood, Reading	103		42.72	38.19	3.76	
MTAI Graduate Education	200	301	64.0	33.3	2.36	5.14***
MTAI Elementary, four-years' training	247	348	55.1	36.7	2.34	2.92**
AUM Secondary Academic	48		21.6	33.96	4.95	
MTAI Graduate Education	200	246	64.0	33.30	2.36	8.03***
MTAI Secondary Academic, five-years' training	218	264	40.8	39.50	2.68	3.21**
MTAI Secondary Academic, four-years' training	264	310	24.7	40.6	2.50	.52
AUM Secondary Nonacademic	10		19.4	30.65	10.21	
MTAI Secondary Nonacademic, four-years' training	98	106	9.7	42.7	4.33	.87
five-years' training	70	78	28.9	36.5	4.40	.78
AUM Secondary-Academic, Nonacademic	58		21.22	33.17	4.39	
MTAI Graduate Education	200	256	64.0	33.3	2.36	8.67***
MTAI Secondary Academic, five-years' training	218	274	40.8	39.5	2.68	3.53***
MTAI Secondary Academic, four-years' training	264	320	24.7	40.6	2.50	.33

[a]Beginning Professional Education denotes students enrolled in either or both methods and curriculum courses.

**$p \leq .01$.
***$p \leq .001$.

Appendix D

Summary of Demographic Characteristics

of AUM Education Students

Associated with MTAI Scores

Characteristics	Higher Scores	Lower Scores
Having no work experience in other fields	.01	
Having one and more offspring	.01	
Having six and more siblings		.05
Being male with a younger brother		.05
Being female	.01	

Appendix E

Summary of MTAI Performances for Summer 1976 AUM Education Students by Education Undergraduate Course Sequence

Groups	N	M	SD	SE
Beginning Education[a]	14	16.42	26.54	7.09
Basic Foundation[b]	22	31.77	30.51	6.50
Beginning Professional Education[c]	26	15.80	37.38	7.33
Final Professional Education[d]	15	27.19	35.52	9.49

[a]Students enrolled in FED 104, Introduction to Professional Education.

[b]Students enrolled in FED 210, Child Growth and Development; one section of FED 211, Adolescent Growth and Development; and FED 214, Psychological Foundations of Education.

[c]Students enrolled in EED 300, Elementary Curriculum I; EED 315, Reading in the Elementary Schools; SED 405, Teaching in Secondary Schools; and HPE 212, Teaching Physical Education in the Elementary School.

[d]Students enrolled in FED 480, Philosophical Foundations of Education; EED 425, Professional Internship in Elementary Education; and SED 425, Professional Internship in Secondary Education.

Appendix F

Classification and Concentration of AUM Education Students in MTAI Study

	Classification						
	AA	MED	Certification[a]	Unclassified[b]	Undergraduate	Other[c]	Total
Concentration							
Elementary	14		(40)				14
Special Education		28		11	14		53
General		52		22	42		116
Early Child/ Reading		51		7	37		95
		131		40	93		278
Secondary	4		(55)				4
Special Education		4		7	1		12
Academic		48		41	45		134
Nonacademic		10		7	22		39
		62		55	68		189
Counselor Education	4						4
School		37					
Nonschool		21					
		58					58
							62
Administration/ Supervision	12	52	(2)				64
Other						19	19
	34	303	(97)	95	161	19	612

[a]Certification designates student taking graduate Education courses for both certification and Master's degree. They were omitted in table totals.

[b]Unclassified designates graduated bachelor's students taking undergraduate Education courses for certification.

[c]Other designates irregular students taking Education courses, e.g., transients.